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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/786,692	05/14/2001	Junichi Hibino	NAK1-BO16	4065

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EXAMINER

COLON, GERMAN

ART UNIT PAPER NUMBER

2879

DATE MAILED: 06/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/786,692

Applicant(s)

HIBINO ET AL.

Examiner

German Colón

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5,7,12-15,20,21,23-29,31,35,36 and 38-96 is/are pending in the application.
- 4a) Of the above claim(s) 1-5,7,12-15,21,23-29,31,35,36,38-74 and 76-90 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 20,75 and 91-96 is/are rejected.
- 7) ☒ Claim(s) 75 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **SUPPLEMENTAL DETAILED ACTION**

### ***Response to Amendment***

1. The Amendment, filed on February 14, 2003, has been entered and acknowledged by the Examiner.
2. Addition of claims 91-96 has been entered.

### ***Election/Restrictions***

3. Applicant's election without traverse of Group II in Paper No. 9 is acknowledged.

### ***Claim Objections***

4. Claim 75 is objected to because of the following informalities:

On claim 75, line 3, a reference to a substance "more difficult to melt the bonding agent" is made. For the purpose of examination, the Examiner interpreted it as "a substance more difficult to melt *than* the bonding agent", as evidenced on at least amended page 19, line 23.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 95 and 96 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Regarding claim 95, claim 95 refers to "the second step of simultaneously removing corresponding parts". However, the second step is a step for transferring the pattern formed.

Referring to claim 96, claim 96 recites the limitation "the developed photo-sensitive film" in line 2. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 20, 91, and 94-96 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki et al. (EP 0 945 886) in view of Asano et al. (US 5,909,083).

Regarding claim 20, Sasaki discloses a display panel manufacturing method for connecting a pair of substrates arranged in opposition via a plurality of barrier ribs 7 (or 50) formed in a specific pattern on at least one of the substrates and a bonding agent 15 (or 31) arranged on the barrier ribs, the display panel manufacturing method comprising a barrier rib pattern forming process and a bonding agent pattern forming process, including:

a step for laminating the bonding agent and a material for forming the barrier ribs layers of certain thickness (see Fig. 4(b) ), and

a step for simultaneously removing corresponding parts of the laminated barrier rib material and bonding agent to form the specific pattern (see Fig. 4(d) ).

Sasaki is silent regarding the limitation of “a step for transferring the pattern formed in the barrier rib forming material and bonding agent to the substrate on which the barrier ribs are to be formed”.

However, in the same field of endeavor, Asano discloses a display panel manufacturing method comprising a barrier rib forming process, said barrier rib forming process includes a step for laminating the material for forming the barrier ribs layers, and a step for simultaneously removing corresponding parts of the laminated barrier rib material, said process features a step for transferring the pattern formed in the barrier rib forming material previous the removing step, and teaches that said transfer may include a plurality of layers in order to provide a pattern form in desired areas alone and that the transfer method advantageously offers good accuracy of the layers thicknesses and good surface smoothness (see Col. 10, lines 20-31 and Col. 13, lines 14-20). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a step for transferring the barrier rib forming material and the bonding agent to the substrate where the barrier ribs are to be formed since Asano teaches that the transfer method advantageously offers good accuracy of the layers thicknesses and good surface smoothness and that said transfer may include a plurality of layers in order to provide a pattern form in desired areas alone.

Regarding claim 91, Sasaki-Asano discloses the bonding agent and the material for forming the barrier ribs being laminated on a film member (see '083, Col. 10, lines 20-26).

Referring to claim 94, Sasaki Asano discloses a photo-insulative film being applied over the bonding agent, exposed into a pattern image and developed into a patter corresponding to the

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desired pattern of barrier ribs (see '886, Figs. 4(b)-4(d) and Col. 15, lines 55-57; and '083, Figs. 1D-1E and 2D-2E).

Referring to claim 95, Sasaki-Asano discloses the step of simultaneously removing corresponding parts of the laminated barrier rib material and the bonding agent including particle blasting (see '886, Col. 12, line 57 and Fig. 4(d) in view of Fig. 3).

Referring to claim 96, Sasaki-Asano discloses removing the photo-sensitive film (see '886, Figs. 4(b)-4(d) ).

9. Claims 75 and 92 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki-Asano as applied to claim 20 above, and further in view of Browning (US 6,030,267).

Regarding claim 75, Sasaki-Asano discloses the claimed invention except for the limitation of "the bonding agent being arranged on the barrier ribs using a compound including a substance which is more difficult to melt than the bonding agent". However, in the same field of endeavor, Browning teaches a manufacturing process for display panels wherein a bonding agent includes a substance more difficult to melt than the bonding agent with the purpose of accurately maintaining an alignment of the substrates as fast as possible and at low temperatures (see Col. 2, lines 32-36 and 54-55). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the teachings of Browning of providing a bonding agent comprising a substance which is more difficult to melt than the bonding agent in order to accurately maintaining an alignment of the substrates as fast as possible and at low temperatures.

Referring to claim 92, Sasaki-Asano-Browning discloses a bonding agent including a substance which is more difficult to melt than the bonding agent, but is silent regarding the

limitation of “the bonding agent being dried before applying a material for forming the barrier ribs”. However, Browning discloses the bonding agent comprising a sol-gel and teaches that the more viscous the sol-gel material, i.e. the drier the sol-gel material, the better (see Col. 4, lines 20-25 and 40-43). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to dried the bonding agent before applying a material for forming the barrier ribs, since Browning teaches said sol-gel material of the bonding agent to have preferred characteristics when dried.

The Examiner notes that Browning discloses the sol-gel material applied to frit pillars before being completely dried. However, such a state is required by the need of dispensing the sol-gel over the frit pillars. It is the Examiner’s position that one of ordinary skill in the art, applying the teachings of Asano of making a laminate and transferring it to a substrate, will entertain the idea of drying the bonding agent before applying a material for forming the barrier ribs, since the requirement for the bonding agent to be in a state which allows it to be dispensed over the pillars is no longer necessary.

10. Claim 93 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki-Asano-Browning as applied to claims 75 and 92 above, and further in view of Kosaka et al. (US 6,039,622).

Sasaki-Asano-Browning discloses the claimed invention wherein in the material for forming the barrier ribs is a composite of glass frit and a resin, but is silent regarding the limitation of said material being a composite of an inorganic filler, glass frit and acrylic resin.

However, in the same field of endeavor, Kosaka discloses a material for forming barrier ribs comprising an inorganic filler, glass frit and acrylic resin, and teaches said material to improve the adhesion of a mask pattern to the barrier ribs and the resistance to sandblasting, making possible to form a finer pattern than the conventionally formed (see Col. 8, lines 34-43, and 64-67). Further, it has been held to be within the general skill of an artisan to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a material for forming the barrier ribs comprising an inorganic filler, glass frit and acrylic resin, since Kosaka teaches said material to improve the adhesion of a mask pattern to the barrier ribs and the resistance to sandblasting, making possible to form a finer pattern than the conventionally formed. Further, the selection of known materials for a known purpose is within the skill of the art.

#### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to German Colón whose telephone number is 703-305-5987. The examiner can normally be reached on Monday thru Friday, from 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 703-305-4794. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7382 for regular communications and 703-308-7382 for After Final communications.



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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



gc

June 20, 2003



**KENNETH J. RAMSEY  
PRIMARY EXAMINER**